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<110> Maddon, Paul J.

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<130> 24577-CY-B

<140> 09/891,119
<141> 2001-06-25

<160> 22

<170> PatentIn version 3.1

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                  1             5                       10

gtg ctg caa ctg gcg ctc ctc cca gca gcc act cag gga aag aaa gtg        159
Val Leu Gln Leu Ala Leu Leu Pro Ala Ala Thr Gln Gly Lys Lys Val
         15                  20                      25

gtg ctg ggc aaa aaa ggg gat aca gtg gaa ctg acc tgt aca gct tcc        207
Val Leu Gly Lys Lys Gly Asp Thr Val Glu Leu Thr Cys Thr Ala Ser
     30                  35                  40

cag aag aag agc ata caa ttc cac tgg aaa aac tcc aac cag ata aag        255
Gln Lys Lys Ser Ile Gln Phe His Trp Lys Asn Ser Asn Gln Ile Lys
45                  50                  55                  60

att ctg gga aat cag ggc tcc tcc tta act aaa ggt cca tcc aag ctg        303
Ile Leu Gly Asn Gln Gly Ser Ser Leu Thr Lys Gly Pro Ser Lys Leu
             65                  70                  75

aat gat cgc gct gac tca aga aga agc ctt tgg gac caa gga aac ttc        351
Asn Asp Arg Ala Asp Ser Arg Arg Ser Leu Trp Asp Gln Gly Asn Phe
             80                  85                  90

ccc ctg atc atc agg aat ctt aag ata gaa gac tca gat act tac atc        399
Pro Leu Ile Ile Arg Asn Leu Lys Ile Glu Asp Ser Asp Thr Tyr Ile
         95                  100                 105

tgt gaa gtg gag gac cag aag gag gag gtg caa ttg cta gtg ttc gga        447
Cys Glu Val Glu Asp Gln Lys Glu Glu Val Gln Leu Leu Val Phe Gly
     110                 115                 120

ttg act gcc aac tct gac acc cac ctg ctt cag ggg cag agc ctg acc        495
Leu Thr Ala Asn Ser Asp Thr His Leu Leu Gln Gly Gln Ser Leu Thr
125                 130                 135                 140

ctg acc ttg gag agc ccc cct ggt agt agc ccc tca gtg caa tgt agg        543
Leu Thr Leu Glu Ser Pro Pro Gly Ser Ser Pro Ser Val Gln Cys Arg
             145                 150                 155

agt cca agg ggt aaa aac ata cag ggg ggg aag acc ctc tcc gtg tct        591
Ser Pro Arg Gly Lys Asn Ile Gln Gly Gly Lys Thr Leu Ser Val Ser
             160                 165                 170

cag ctg gag ctc cag gat agt ggc acc tgg aca tgc act gtc ttg cag        639
Gln Leu Glu Leu Gln Asp Ser Gly Thr Trp Thr Cys Thr Val Leu Gln
         175                 180                 185

aac cag aag aag gtg gag ttc aaa ata gac atc gtg gtg cta gct ttc        687
Asn Gln Lys Lys Val Glu Phe Lys Ile Asp Ile Val Val Leu Ala Phe
     190                 195                 200

cag aag gcc tcc agc ata gtc tat aag aaa gag ggg gaa cag gtg gac        735
Gln Lys Ala Ser Ser Ile Val Tyr Lys Lys Glu Gly Glu Gln Val Asp
205                 210                 215                 220

ttc tcc ttc cca ctc gcc ttt aca gtt gaa aag ctg acg ggc agt ggc        783
Phe Ser Phe Pro Leu Ala Phe Thr Val Glu Lys Leu Thr Gly Ser Gly
             225                 230                 235

gag ctg tgg tgg cag gcg gag agg gct tcc tcc tcc aag tct tgg atc        831
Glu Leu Trp Trp Gln Ala Glu Arg Ala Ser Ser Ser Lys Ser Trp Ile
             240                 245                 250
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acc ttt gac ctg aag aac aag gaa gtg tct gta aaa cgg gtt acc cag       879
Thr Phe Asp Leu Lys Asn Lys Glu Val Ser Val Lys Arg Val Thr Gln
        255             260                 265

gac cct aag ctc cag atg ggc aag aag ctc ccg ctc cac ctc acc ctg       927
Asp Pro Lys Leu Gln Met Gly Lys Lys Leu Pro Leu His Leu Thr Leu
270             275                 280

ccc cag gcc ttg cct cag tat gct ggc tct gga aac ctc acc ctg gcc       975
Pro Gln Ala Leu Pro Gln Tyr Ala Gly Ser Gly Asn Leu Thr Leu Ala
285             290                 295                 300

ctt gaa gcg aaa aca gga aag ttg cat cag gaa gtg aac ctg gtg gtg      1023
Leu Glu Ala Lys Thr Gly Lys Leu His Gln Glu Val Asn Leu Val Val
                305                 310                 315

atg aga gcc act cag ctc cag aaa aat ttg acc tgt gag gtg tgg gga      1071
Met Arg Ala Thr Gln Leu Gln Lys Asn Leu Thr Cys Glu Val Trp Gly
            320                 325                 330

ccc acc tcc cct aag ctg atg ctg agc ttg aaa ctg gag aac aag gag      1119
Pro Thr Ser Pro Lys Leu Met Leu Ser Leu Lys Leu Glu Asn Lys Glu
        335                 340                 345

gca aag gtc tcg aag cgg gag aag gcg gtg tgg gtg ctg aac cct gag      1167
Ala Lys Val Ser Lys Arg Glu Lys Ala Val Trp Val Leu Asn Pro Glu
    350                 355                 360

gcg ggg atg tgg cag tgt ctg ctg agt gac tcg gga cag gtc ctg ctg      1215
Ala Gly Met Trp Gln Cys Leu Leu Ser Asp Ser Gly Gln Val Leu Leu
365                 370                 375                 380

gaa tcc aac atc aag gtt ctg ccc aca tgg tcc acc ccg gtg taa tgg      1263
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            20              25                  30

Lys Gly Asp Thr Val Glu Leu Thr Cys Thr Ala Ser Gln Lys Lys Ser
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Page 3

Ile Gln Phe His Trp Lys Asn Ser Asn Gln Ile Lys Ile Leu Gly Asn
    50   55   60

Gln Gly Ser Ser Leu Thr Lys Gly Pro Ser Lys Leu Asn Asp Arg Ala
65   70   75   80

Asp Ser Arg Arg Ser Leu Trp Asp Gln Gly Asn Phe Pro Leu Ile Ile
            85   90   95

Arg Asn Leu Lys Ile Glu Asp Ser Asp Thr Tyr Ile Cys Glu Val Glu
            100   105   110

Asp Gln Lys Glu Glu Val Gln Leu Leu Val Phe Gly Leu Thr Ala Asn
            115   120   125

Ser Asp Thr His Leu Leu Gln Gly Gln Ser Leu Thr Leu Thr Leu Glu
    130   135   140

Ser Pro Pro Gly Ser Ser Pro Ser Val Gln Cys Arg Ser Pro Arg Gly
145   150   155   160

Lys Asn Ile Gln Gly Gly Lys Thr Leu Ser Val Ser Gln Leu Glu Leu
            165   170   175

Gln Asp Ser Gly Thr Trp Thr Cys Thr Val Leu Gln Asn Gln Lys Lys
            180   185   190

Val Glu Phe Lys Ile Asp Ile Val Val Leu Ala Phe Gln Lys Ala Ser
            195   200   205

Ser Ile Val Tyr Lys Lys Glu Gly Glu Gln Val Asp Phe Ser Phe Pro
    210   215   220

Leu Ala Phe Thr Val Glu Lys Leu Thr Gly Ser Gly Glu Leu Trp Trp
225   230   235   240

Gln Ala Glu Arg Ala Ser Ser Ser Lys Ser Trp Ile Thr Phe Asp Leu
            245   250   255

Lys Asn Lys Glu Val Ser Val Lys Arg Val Thr Gln Asp Pro Lys Leu
            260   265   270

Gln Met Gly Lys Lys Leu Pro Leu His Leu Thr Leu Pro Gln Ala Leu
        275   280   285

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Pro Gln Tyr Ala Gly Ser Gly Asn Leu Thr Leu Ala Leu Glu Ala Lys
    290                 295                 300

Thr Gly Lys Leu His Gln Glu Val Asn Leu Val Val Met Arg Ala Thr
305                 310                 315                 320

Gln Leu Gln Lys Asn Leu Thr Cys Glu Val Trp Gly Pro Thr Ser Pro
                325                 330                 335

Lys Leu Met Leu Ser Leu Lys Leu Glu Asn Lys Glu Ala Lys Val Ser
            340                 345                 350

Lys Arg Glu Lys Ala Val Trp Val Leu Asn Pro Glu Ala Gly Met Trp
        355                 360                 365

Gln Cys Leu Leu Ser Asp Ser Gly Gln Val Leu Leu Glu Ser Asn Ile
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Lys Val Leu Pro Thr Trp Ser Thr Pro Val Trp Arg Leu
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acagtggaac tgacctgtac agcttcccag aagaagagca tacaattcca ctggaaaaac   240
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aggagtccaa ggggtaaaaa catacagggg gggaagaccc tctccgtgtc tcagctggag   600
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aagaagctcc cgctccacct caccctgccc caggccttgc ctcagtatgc tggctctgga   960
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aaggcggtgt gggtgctgaa ccctgaggcg gggatgtggc agtgtctgct gagtgactcg   1200
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ccgcgtttcc tgcctgcgga ccagatgaat gtagcagatc ccacgctctg cctcctgtt   1560
cgtcctccct acaatttgcc attgtttctc ctgggttagg ccccggcttc actggttgag   1620
tgttgctctc tagtttccag aggcttaatc acaccgtcct ccacgccatt ccttttcct   1680
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            20   25   30

Lys Gly Asp Thr Val Glu Leu Thr Cys Thr Ala Ser Gln Lys Lys Ser
            35   40   45

Ile Gln Phe His Trp Lys Asn Ser Asn Gln Ile Lys Ile Leu Gly Asn
        50   55   60

Gln Gly Ser Phe Leu Thr Lys Gly Pro Ser Lys Leu Asn Asp Arg Ala
65   70   75   80

Asp Ser Arg Arg Ser Leu Trp Asp Gln Gly Asn Phe Pro Leu Ile Ile
                85   90   95

Lys Asn Leu Lys Ile Glu Asp Ser Asp Thr Tyr Ile Cys Glu Val Glu
            100   105   110

Asp Gln Lys Glu Glu Val Gln Leu Leu Val Phe Gly Leu Thr Ala Asn
            115   120   125

Ser Asp Thr His Leu Leu Gln Gly Gln Ser Leu Thr Leu Thr Leu Glu
        130   135   140

Ser Pro Pro Gly Ser Ser Pro Ser Val Gln Cys Arg Ser Pro Arg Gly
145   150   155   160

Lys Asn Ile Gln Gly Gly Lys Thr Leu Ser Val Ser Gln Leu Glu Leu
                165   170   175

Gln Asp Ser Gly Thr Trp Thr Cys Thr Val Leu Gln Asn Gln Lys Lys
            180   185   190

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Val Glu Phe Lys Ile Asp Ile Val Val Leu Ala Phe Gln Lys Ala Ser
    195   200   205

Ser Ile Val Tyr Lys Lys Glu Gly Glu Gln Val Glu Phe Ser Phe Pro
 210   215   220

Leu Ala Phe Thr Val Glu Lys Leu Thr Gly Ser Gly Glu Leu Trp Trp
225   230   235   240

Gln Ala Glu Arg Ala Ser Ser Ser Lys Ser Trp Ile Thr Phe Asp Leu
        245   250   255

Lys Asn Lys Glu Val Ser Val Lys Arg Val Thr Gln Asp Pro Lys Leu
      260   265   270

Gln Met Gly Lys Lys Leu Pro Leu His Leu Thr Leu Pro Gln Ala Leu
     275   280   285

Pro Gln Tyr Ala Gly Ser Gly Asn Leu Thr Leu Ala Leu Glu Ala Lys
  290   295   300

Thr Gly Lys Leu His Gln Glu Val Asn Leu Val Val Met Arg Ala Thr
305   310   315   320

Gln Leu Gln Lys Asn Leu Thr Cys Glu Val Trp Gly Pro Thr Ser Pro
        325   330   335

Lys Leu Met Leu Ser Leu Lys Leu Glu Asn Lys Glu Ala Lys Val Ser
      340   345   350

Lys Arg Glu Lys Ala Val Trp Val Leu Asn Pro Glu Ala Gly Met Trp
     355   360   365

Gln Cys Leu Leu Ser Asp Ser Gly Gln Val Leu Leu Glu Ser Asn Ile
  370   375   380

Lys Val Leu Pro Thr Trp Ser Thr Pro Val Gln Pro Met Ala Leu Ile
385   390   395   400

Val Leu Gly Gly Val Ala Gly Leu Leu Leu Phe Ile Gly Leu Gly Ile
        405   410   415

Phe Phe Cys Val Arg Cys Arg His Arg Arg Gln Ala Glu Arg Met
      420   425   430

Ser Gln Ile Lys Arg Leu Leu Ser Glu Lys Lys Thr Cys Gln Cys Pro
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His Arg Phe Gln Lys Thr Cys Ser Pro
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Gln Gly Asn Lys Val Val Leu Gly Lys Lys Gly Asp Thr Val Glu Leu
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Thr Cys Thr Ala Ser Gln Lys Lys Ser Ile Gln Phe His Trp Lys Asn
       20   25   30

Ser Asn Gln Ile Lys Ile Leu Gly Asn Gln Gly Ser Phe Leu Thr Lys
    35   40   45

Gly Pro Ser Lys Leu Asn Asp Arg Ala Asp Ser Arg Arg Ser Leu Trp
   50   55   60

Asp Gln Gly Asn Phe Pro Leu Ile Ile Lys Asn Leu Lys Ile Glu Asp
65   70   75   80

Ser Asp Thr Tyr Ile Cys Glu Val Glu Asp Gln Lys Glu Glu
      85   90

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<212> PRT

<213> Mouse

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Asp Ile Val Thr Met Thr Cys Gln Ala Ser Gln Gly Thr Ser Ile Asn
      20   25   30

Leu Asn Trp Phe Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
    35   40   45

Tyr Gly Ala Ser Ile Leu Glu Asp Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60

Ser Arg Tyr Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Glu Asp
65   70   75   80

Glu Asp Met Ala Thr Tyr Phe Cys Leu Gln His Ser Tyr Leu Pro Tyr
                85   90   95

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<210>   13

<211>   102

<212>   PRT

<213>   human

<400>   13

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            20   25   30

Cys Ser Trp Leu Phe Gln Pro Arg Gly Ala Ala Ala Ser Pro Thr Phe
        35   40   45

Leu Leu Tyr Leu Ser Gln Asn Lys Pro Lys Ala Ala Glu Gly Leu Asp
    50   55   60

Thr Gln Arg Phe Ser Gly Lys Arg Leu Gly Asp Thr Phe Val Leu Thr
65   70   75   80

Leu Ser Asp Phe Arg Arg Glu Asn Glu Gly Tyr Tyr Phe Cys Ser Ala
                        Page 11

                    85   90   95

Leu Ser Asn Ser Ile Met
                100

<210>   14

<211>   102

<212>   PRT

<213>   human

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                20   25   30

Phe Trp Tyr Arg Gln Thr Met Met Arg Gly Leu Glu Leu Leu Ile Tyr
        35   40   45

Phe Asn Asn Asn Val Pro Ile Asp Asp Ser Gly Met Pro Glu Asp Arg
    50   55   60

Phe Ser Ala Lys Met Pro Asn Ala Ser Phe Ser Thr Leu Lys Ile Gln
65   70   75   80

Pro Ser Glu Pro Arg Asp Ser Ala Val Tyr Phe Cys Ala Ser Ser Phe
                85   90   95

Ser Thr Cys Ser Ala Asn
                100

<210>   15

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1   5   10   15

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              20              25              30

Leu Phe Trp Tyr Lys Gln Pro Pro Ser Gly Glu Leu Val Phe Leu Ile
              35              40              45

Arg Arg Asn Ser Phe Asp Glu Gln Asn Glu Ile Ser Gly Arg Tyr Ser
    50              55              60

Trp Asn Phe Gln Lys Ser Thr Ser Ser Phe Asn Phe Thr Ile Thr Ala
65              70              75              80

Ser Gln Val Val Asp Ser Ala Val Tyr Phe Cys Ala Leu Asp Ser Ser
              85              90              95

Ala Ser Lys
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<210> 17

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1           5           10
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<210> 18

<211> 13

<212> PRT

<213> human

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<400> 18

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1   5   10

<210> 19

<211> 12

<212> PRT

<213> human

<400> 19

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg
1   5   10

<210> 20

<211> 12

<212> PRT

<213> human

<400> 20

Ile Ile Phe Gly Ser Gly Thr Arg Leu Ser Ile Arg
1   5   10

<210> 21

<211> 31

<212> PRT

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1   5   10   15

Gly Leu Leu Leu Phe Ile Gly Leu Gly Ile Phe Phe Cys Val Arg
            20   25   30

<210> 22

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<213> human

<400> 22

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Ser Thr Ser Ala Gln Asn Lys Met Leu Ser Gly Val Gly Gly Phe Val
1               5               10              15

Leu Gly Leu Leu Phe Leu Gly Leu Gly Leu Phe Ile Tyr Phe Arg
            20              25              30
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